

## ABSTRACT OF THE DISCLOSURE

The present invention relates to a method for generating a single-sideband optical signal. According to the method, as data signals having a 90-degree phase difference with respect to input data signals, which are NRZ signals at 10 Gb/s, 0.5-bit delay data signals are generated by a 0.5-bit delay circuit for obtaining a delay corresponding to  $\pi/2$  of the bit period of the input data signal. An SSB optical signal produced from the data signals and the 0.5-bit delay data signals is generated through an optical filter. Further, to eliminate a residual intensity-modulated component, the generated SSB optical signal is fed back to appropriately adjust the center frequency of the optical filter. The carrier output frequency of a semiconductor laser can be adjusted instead of the center frequency of the optical filter. When an RZ signal is used as an input data signal, a 0.25-bit delay circuit is used.